

The following amendments and remarks are submitted in connection with the above-identified patent application:

IN THE CLAIMS

1. (currently amended) A foundry binder composition comprising as a mixture:
 - (a) an organic foundry binder having at least one component; and
 - (b) an effective amount of a ~~divalent sulfur compound~~ thiuram where said ~~divalent sulfur compound~~ thiuram is present in at least one component of the binder.
2. (canceled)
3. (currently amended) The foundry binder composition of claim ~~2~~ 1 wherein the organic binder is selected from the group consisting of phenolic-urethane binders, phenolic shell binders, aqueous alkaline phenolic resole binders, acrylic/epoxy binders, and furan binders.
4. (original) The foundry binder composition of claim 3 wherein the organic binder is a cold-box binder.
5. (original) The foundry binder composition of claim 4 wherein in the cold-box binder is a phenolic urethane binder.
6. (currently amended) The foundry binder composition of claim 5 wherein the ~~divalent sulfur compound~~ thiuram is dispersed in a liquid dispersant before mixing said ~~divalent sulfur compound~~ thiuram with (a) or (b), and the ~~divalent metal compound~~ thiuram is

selected from the group consisting of tetrabutyl thiuram disulfide, tetraethyl thiuram disulfide, tetramethyl thiuram disulfide, tertbutyl thiuram disulfide and mixtures thereof.

7. (currently amended) A foundry mix comprising:
 - (a) a major amount of a foundry aggregate;
 - (b) an effective binding amount of an organic foundry binder having at least component; and
 - (c) an effective amount of a ~~divalent sulfur compound~~ thiuram where said ~~divalent sulfur compound~~ thiuram that is present in (a), ~~at least one component of~~ (b), or both.
8. (canceled)
9. (currently amended) The foundry mix of claim ~~8~~ 7 wherein the organic binder of the foundry mix is selected from the group consisting of phenolic-urethane binders, phenolic shell binders, aqueous alkaline phenolic resole binders, acrylic epoxy binders, and furan binders.
10. (original) The foundry mix of claim 9 where the organic binder is a cold-box binder.
11. (original) The foundry mix of claim 10 wherein the cold-box binder is a phenolic urethane binder.
12. The foundry mix of claim 11 wherein the ~~divalent sulfur compound~~ thiuram is dispersed in a liquid dispersant before mixing said ~~divalent sulfur compound~~ thiuram with (a) or (b), and the ~~divalent metal compound~~ thiuram is selected from the group consisting of

tetrabutyl thiuram disulfide, tetraethyl thiuram disulfide, tetramethyl thiuram disulfide, tertbutyl thiuram disulfide and mixtures thereof.

13. (currently amended) A cold-box process for preparing foundry shapes which comprises:
 - (A) introducing a foundry mix of claim 7, 8, 9, 10, 11, or 12 into a pattern to prepare an uncured foundry shape;
 - (B) contacting said uncured foundry shape prepared by (A) with a vaporous curing catalyst;
 - (C) allowing said foundry shape resulting from (B) to cure until said shape becomes handleable; and
 - (D) removing said foundry shape from the pattern.
14. (original) The process of claim 13 wherein the foundry shape is an internal core.
15. (original) The process of claim 14 wherein the binder is a phenolic urethane binder.
16. (original) A foundry shape prepared in accordance with claims 15.
17. (original) A process for casting a metal part which comprises:
 - (A) inserting a foundry shape of claim 16 into a casting assembly;
 - (B) pouring metal, while in the liquid state, into said casting assembly;
 - (C) allowing said metal to cool and solidify; and

(D) then separating the cast metal part from the casting assembly.

18. (original) The process of claim 17 wherein the metal is aluminum.

19. (original) The process of claim 18 wherein the foundry shape is an internal core.

20. (original) A metal part prepared in accordance with claim 19.

21. (canceled)

22. (canceled)

23. (canceled)

24. (canceled)

25. (canceled)

26. (canceled)

DISCUSSION OF EXAMINER'S OFFICE ACTION

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 21-26 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 21-26 of prior U.S. Patent No. 6,426,374. This is a double patenting rejection.

Claims 21-26 of the present invention are duplicate claims of the already patented U.S. 6,426,374.

Applicant's response

Claims 21-26 have been canceled.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Claims 1, 3, 4, 7, 13-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-7, 9-20 of U.S. Patent No. 6,426,374. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following explanation.

The patented invention '374 discloses composition for foundry molds, which contains binder and divalent sulfur additive. The foundry binder is utilized in cold-box foundry with phenolic urethane binder system. The mix is introduced into the shape to make mold, an internal core, cured and removed from the shape. The internal core is introduced into casting assembly, liquid metal, aluminum, is poured and allowed to solidify thereby forming metallic part or object.

The difference between the present invention and the already patented invention is the type of the divalent sulfur source.

Already patented invention '374 discloses use of elemental sulfur, while present invention teaches use of thiuram. Therefore only those claims of the present invention are rejected over the patented invention that do

not specifically disclose the divalent sulfur compound.

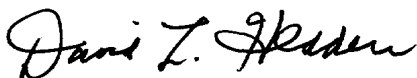
Applicant's response

The claims have been amended to define an invention that is patentably distinct from the invention claimed in U.S. Patent 6,426,374. All of the claims are now restricted to thiuram

CONCLUSION

Applicants submit that the application is now in condition for allowance and respectfully request a notice to this effect. If the Examiner believes further explanation of Applicants' position is needed, Applicants' attorney will discuss this matter over the telephone or visit the Examiner personally if this may be useful.

Respectfully submitted,



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